

IN THE CLAIMS

1. (currently amended) An electronic transmission ~~system~~apparatus, comprising:

a first electronic transmission apparatus; and

a second electronic transmission apparatus;

said first electronic transmission apparatus
including:

~~first and second communication means, connected to a signal transmission line, the signal transmission line connecting a transmitting electronic device to said first communication means and connecting a receiving electronic device to said second communication means, said first communication means for receiving an first encrypted signal from the a transmitting electronic device over the signal transmission line,~~
first authentication process means for executing a first authentication process with the transmitting electronic device via said first communication means and the signal transmission line, said first communication means and for receiving first key information from the transmitting electronic device over via said first communication means and the signal transmission line, based on a result of the first authentication process,

first decryption means for decrypting the first encrypted signal using the first key information, the first key information being supplied by said first authentication process means supplying the first key information to said decryption means based on the result of when the first authentication process determines that said first electronic transmission apparatus is an authorized device,

first processing means for ~~executing an processing~~
~~with the~~ first decrypted signal ~~provided by said~~
~~decryption means~~, said first processing means including
a first section operable to display or record the first
decrypted signal,[†]

~~said second communication means~~ connected to the
signal transmission line, ~~enabling said first~~
authentication process means ~~executing~~ ~~of a second~~
authentication process with ~~the receiving electronic~~
~~device over said second electronic transmission~~
apparatus via said second communication means and the
signal transmission line,[†]

first encryption means for re-encrypting the first
decrypted signal using second key information, the
second key information being supplied by said first
authentication process means, ~~supplying the second key~~
~~information to said encryption means~~,[†] and

first signal switching means for selecting, for
output to said second communication means, one of the
first encrypted signal and the first re-encrypted
signal based on a first selection signal provided by
said first authentication process means ~~in response to a~~
~~result of the second authentication process~~, the first
encrypted signal being supplied by said first
communication means ~~supplying the encrypted signal to~~
~~said signal switching means~~, the first re-encrypted
signal being supplied by said first encryption means,
~~supplying the re-encrypted signal to said switching~~
~~means~~,[†]

said first authentication process means supplying
a selected one of the first key information and the
second key information to said second communication
means when the second authentication process

determines that said second communication means is an authorized device, the first key information to said second communication means being selected when said first signal switching means selects the first encrypted signal and supplying the second key information to said second communication means being selected when first said signal switching means selects the first re-encrypted signal,

said second communication means transmitting the selected one of the first or key information and the second key information and the selected one of the first encrypted signal and the first re-encrypted signal over the signal transmission line to said second electronic transmission apparatus when the second authentication process determines that said second electronic transmission apparatus is an authorized device; the receiving electronic device;
said second electronic transmission apparatus

including:

third communication means, connected to the signal transmission line, for receiving a second encrypted signal from said first electronic transmission apparatus over the signal transmission line, the second encrypted signal being the selected one of the first encrypted signal and the first re-encrypted signal,

second authentication process means for executing the second authentication process with said first electronic transmission apparatus via said third communication means and the signal transmission line, and for receiving the selected one of the first key information and the second key information from said

first electronic transmission apparatus via said third communication means and the signal transmission line,

second decryption means for decrypting the second encrypted signal using the received key information, the received key information being supplied by said second authentication process means when the second authentication process determines that said second electronic transmission apparatus is an authorized device;

second processing means for processing the second decrypted signal, said second processing means including a second section operable to display or record the second decrypted signal;

fourth communication means connected to the signal transmission line, said second authentication process means executing a third authentication process with a receiving electronic device via said fourth communication means and the signal transmission line;

second encryption means for re-encrypting the second decrypted signal using third key information, the third key information being supplied by said second authentication process means; and

second signal switching means for selecting, for output to said fourth communication means, one of the second encrypted signal and the second re-encrypted signal based on a second selection signal provided by said second authentication process means, the second encrypted signal being supplied by said third communication means, the second re-encrypted signal being supplied by said second encryption means;

said second authentication process means supplying a selected one of the received key information and the third key information to said

fourth second communication means when the third authentication process determines that the receiving electronic device is an authorized device, the received key information being selected when said second signal switching means selects the second encrypted signal and the third key information being selected when said second signal switching means selects the second re-encrypted signal;

said fourth communication means transmitting the selected one of the received key information and the third key information and the selected one of the second encrypted signal and the second re-encrypted signal over the signal transmission line to the receiving electronic device when the third authentication process determines that the receiving electronic device is an authorized device.

2. - 4. (cancelled)

5. (currently amended) The electronic transmission apparatus according to claim 41, wherein the ~~selecting operation carried out by said signal switching means is based on a first~~ selection signal is supplied by the transmitting electronic device via said first communication means and the signal transmission line.

6. (currently amended) The electronic transmission apparatus according to claim 41, further comprising:

operation input means for providing a user-inputted signal for controlling the switching operation of one or more of said first signal switching means and said second signal switching means.

7. (currently amended) A signal transmission method, comprising:

executing a first authentication process ~~with-between~~
a transmitting electronic device and a first electronic
transmission apparatus over a signal transmission line;

receiving, at the first electronic transmission
apparatus, an first encrypted signal from the transmitting
electronic device over the signal transmission line;

receiving, at the first electronic transmission
apparatus, first key information from the transmitting
electronic device over the signal transmission line ~~based~~
~~on a result of said when the~~ first authentication process
determines that the first electronic transmission apparatus
is an authorized device;

decrypting, at the first electronic transmission
apparatus, the first encrypted signal using the first key
information when the first authentication process
determines that the electronic transmission apparatus is an
authorized device;

executing, at the first electronic transmission
apparatus, an first process using the decrypted signal, the
first process including displaying or recording the first
decrypted signal;

executing a second authentication process ~~with-between~~
the first electronic transmission apparatus and a receiving
~~electronic device-second electronic transmission apparatus~~
over the signal transmission line;

re-encrypting, at the first electronic transmission
apparatus, the first decrypted signal using second key
information;

selecting, at the first electronic transmission
apparatus, one of the first encrypted signal and the first
re-encrypted signal for transmission to the second
~~receiving-electronic transmission apparatus device, one of~~

~~the encrypted signal and the re-encrypted signal in response to a result of the second authentication process;~~

selecting, at the first electronic transmission apparatus, one of the first key information and the second key information for transmission to the second electronic transmission apparatus, the first key information being selected when the selected one of the first encrypted signal and the first re-encrypted signal is the first encrypted signal, the second key information being selected when the selected one of the first encrypted signal and the first re-encrypted signal is the first re-encrypted signal;
and

transmitting, from the first electronic transmission apparatus, the selected one of the first encrypted signal and the first re-encrypted signal and the selected one of the first key information and the second key information over the signal transmission line to the receiving electronic device second electronic transmission apparatus when the second authentication process determines that the second electronic transmission apparatus is an authorized device;

receiving, at the second electronic transmission apparatus, a second encrypted signal from the first electronic transmission apparatus over the signal transmission line, the second encrypted signal being the selected one of the first encrypted signal and the first re-encrypted signal;

receiving, at the second electronic transmission apparatus, the selected one of the first key information and the second key information from the first electronic transmission apparatus over the signal transmission line when the second authentication process determines that the

second electronic transmission apparatus is an authorized device;

decrypting, at the second electronic transmission apparatus, the second encrypted signal using the received key information when the second authentication process determines that the second electronic transmission apparatus is an authorized device;

executing, at the second electronic transmission apparatus, a second process using the second decrypted signal, the second process including displaying or recording the second decrypted signal;

executing a third authentication process with a receiving electronic device over the signal transmission line;

re-encrypting the second decrypted signal using third key information;

selecting one of the second encrypted signal and the second re-encrypted signal for transmission to the receiving electronic device;

selecting one of the received key information and the third key information for transmission to the receiving electronic device, the received key information being selected when the selected one of the second encrypted signal and the second re-encrypted signal is the second encrypted signal, the third key information being selected when the selected one of the second encrypted signal and the second re-encrypted signal is the second re-encrypted signal; and

transmitting the selected one of the second encrypted signal and the second re-encrypted signal and the selected one of the received key information and the first-third key information to the receiving electronic device via the signal transmission line when the third authentication

process determines that the receiving electronic device is an authorized device~~encrypted signal is selected, and transmitting the second key information to the receiving electronic device via the signal transmission line when the re-encrypted signal is selected.~~

8. - 9. (cancelled)

10. (currently amended) The signal transmission method according to claim 7, wherein said step of selecting one of the first encrypted signal ~~or~~ and the first re-encrypted signal is executed based on a signal received from the transmitting electronic device via the signal transmission line.

11. (currently amended) The signal transmission method according to claim 7, wherein said step of selecting one of the first encrypted signal ~~or~~ and the first re-encrypted signal is executed based on a user-inputted signal~~an operation result of an operation input means.~~

12. - 17. (cancelled)

18. (new) The signal transmission method according to claim 7, wherein said step of selecting one of the second encrypted signal and the second re-encrypted signal is executed based on a user-inputted signal.